

### **REMARKS**

Claims 1, 2, 9, 10, 14, and 24 are amended. Claims 4, 12, 13, 9, 20, 22, and 26 - 34 have been cancelled. Claims 1-3, 5-11, 14-18 and 23-25 are now pending. Claim 1 is in independent form.

#### **Claims Rejections - 35 U.S.C. § 102**

Claims 1, 9, 15 and 19-21 were rejected in the office action under 35 USC §102(a) as being anticipated by Ota, JP 2002-191654. Claims 1, 2, 15-21 and 24 were rejected in the office action under 35 USC §102(a) as being anticipated by Artigue, EP 1 169 982 A1.

#### **Claims Rejections - 35 U.S.C. § 103**

Claims 16-18 and 23-25 were rejected in the office action under 35 USC §103(a) as being unpatentable over Ota, JP 2002-191654. Claims 3, 5-9, 11, 14, 23 and 25 were rejected in the office action under 35 USC §103(a) as being unpatentable over Artigue, EP 1 169 982 A1.

Applicant has amended claim 1 in order to state that the actuated prosthesis is an actuated leg prosthesis for replacement of a leg of an above knee amputee. In this regards, Applicant also specified that the primary joint member is a knee member. Furthermore, Applicant specified that the linear actuator comprises a rotary motor, a screw rotatable by said rotary motor and a follower displaceable along said screw upon rotation thereof by said rotary motor, said rotary motor being pivotally connected to said structural member and said follower being pivotally connected to said knee member at a location spaced from said pivot assembly.

Applicant contends that the cited art, taken together or alone does not teach nor anticipate a leg prosthesis for replacement of a leg of an above knee amputee that includes a linear actuator comprising a rotary motor, a screw rotatable by said rotary motor and a follower displaceable along said screw upon rotation thereof by said rotary motor, said rotary motor being pivotally connected to said structural member and said follower being pivotally connected to said knee member at a location spaced from said pivot assembly.

The Ota citation discloses a “walking assistant equipment” and as such is not applicable to the present invention. Although the Derwent abstract mentions the term “prosthetic leg” it

may clearly be seen by the figure and the abstract itself that the “prosthetic leg” is to be used with an existing leg of a handicapped person and is **not** a replacement of a leg of an above knee amputee. More specifically, the abstract says that “Leg gripper (3) is rotatably attached with the thigh gripper (2).” Thus it is clear that the “leg prosthesis” comprises a leg gripper (3) to grip onto an existing leg and a thigh gripper (2) to grip onto an existing thigh, requiring the handicapped person to have a leg and not be an above knee amputee. This is also clearly evidenced by the English translation of the Ota patent application, which does not mention the term “prosthesis”, instead using the term “walking assistant equipment”, and at paragraph [0016] of page 13 states: “In the mounting, the upper thigh mounting member 2 is set to the upper thigh part of the leg, and the lower thigh mounting member 3 is set to the lower thigh part of the leg. They are strongly mounted with a magic tape (registered trademark) 11.” Moreover, Ota defines, at paragraph [0010] of page 9, a “handicapped person” as “due to motor nerve paralysis, etc.”, which implies a person having a paralyzed leg and not an above knee amputee. Thus, the presence of a leg is essential to the functioning of the walking assistant equipment disclosed by Ota.

Furthermore, it may be clearly seen in the figures that although the ball thread 7 (screw) is rotated within the socket 8 (follower), the socket 8 is **not** pivotally connected to the lower thigh mounting member 3 (or in the described alternative embodiment, the socket 8 is **not** pivotally connected to the upper thigh mounting member 2). Thus Ota teaches away from a screw rotatable by said rotary motor and a follower displaceable along said screw upon rotation thereof by said rotary motor, said rotary motor being pivotally connected to said structural member and said follower being **pivotally** connected to said knee member at a location spaced from said pivot assembly.

As for the Artigue citation, it discloses a “modular active prosthesis for the arm and forearm” and as such is not applicable to the present invention. More specifically, Artigue discloses a prosthesis having a mechanism providing the biomechanical functions of the upper extremity joints which are characterized by rapid and precise angular movements with relatively low torque, while a mechanism providing the biomechanical functions of the lower extremity joint is characterized by slow and imprecise angular movements with high torque. Furthermore,

Artigue teaches the use of a motor coupled with a gearbox, e.g. dented wheels 11, 12 (roues dentées 11, 12), in order to produce torque, which gearbox introduces inertia. As a lower extremity prosthesis requires high torque and constant back and forth movement, the inertia that would be introduced by such a design becomes significant and makes the design unsuitable for lower extremity applications. Moreover, the positioning of the motor as disclosed by Artigue severely limits the range of motion of the prosthesis, which again is not suitable for lower extremity applications.

Furthermore, Artigue discloses that the motor 10 is pivotally connected to the primary joint member 1 and **not** to the elongated structural member 2 as this would make impossible any rotation of the primary joint member 1 relative to the structural member 2 about the pivot assembly 3 and would teach away from the rotation of said rotary motor rotates said screw in or out of said follower thereby causing a corresponding rotation of said knee member relative to said structural member about said pivotal axis. Thus Artigue teaches away from a motor being pivotally connected to said structural member.

Further still, Artigue discloses that the cylindre 6 (follower) is connected to the elongated structural member 2 through a hinge 9(liaison à charnière simple) and **not** to the primary joint member 1. Thus Artigue teaches away from a follower pivotally connected to the knee member at a location spaced from the pivot assembly.

Therefore claim 1, as amended, is patentable over the cited art.

As a consequence to amendments to claim 1, minor amendments have been made to claims 2, 9, 10, 14, 20 and 24.

Finally, pending claims 2, 3, 5 to 11, 14 to 20 and 23-25 are ultimately dependent on claim 1 and as such are also patentable over the cited art.

## CONCLUSION

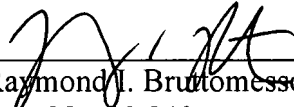
In conclusion, applicant submits that all pending claims are now in condition for allowance, and allowance is, therefore, respectfully requested. It is believed that the foregoing

amendments and remarks fully comply with the office action and that the claims herein should now be allowable to applicant. Accordingly, reconsideration and allowance of claims 1-3, 5-11, 14-18 and 23-25 is requested.

The examiner is invited to telephone the undersigned, applicant's attorney of record, to facilitate advancement of the present application. Please apply any charges not covered, or any credits, to Deposit Account 04-0932 (Reference Number 14206-67101-B).

Respectfully submitted,

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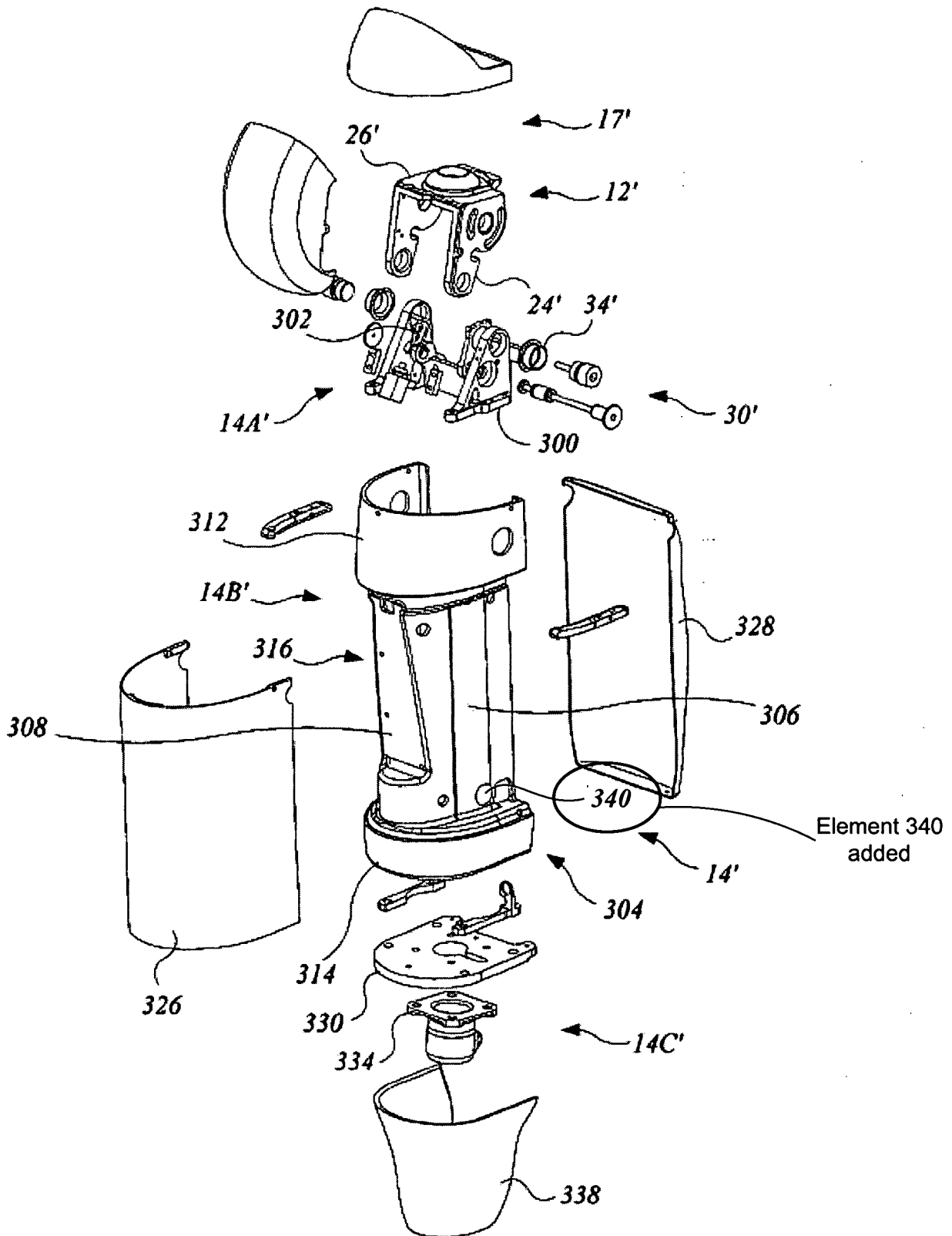
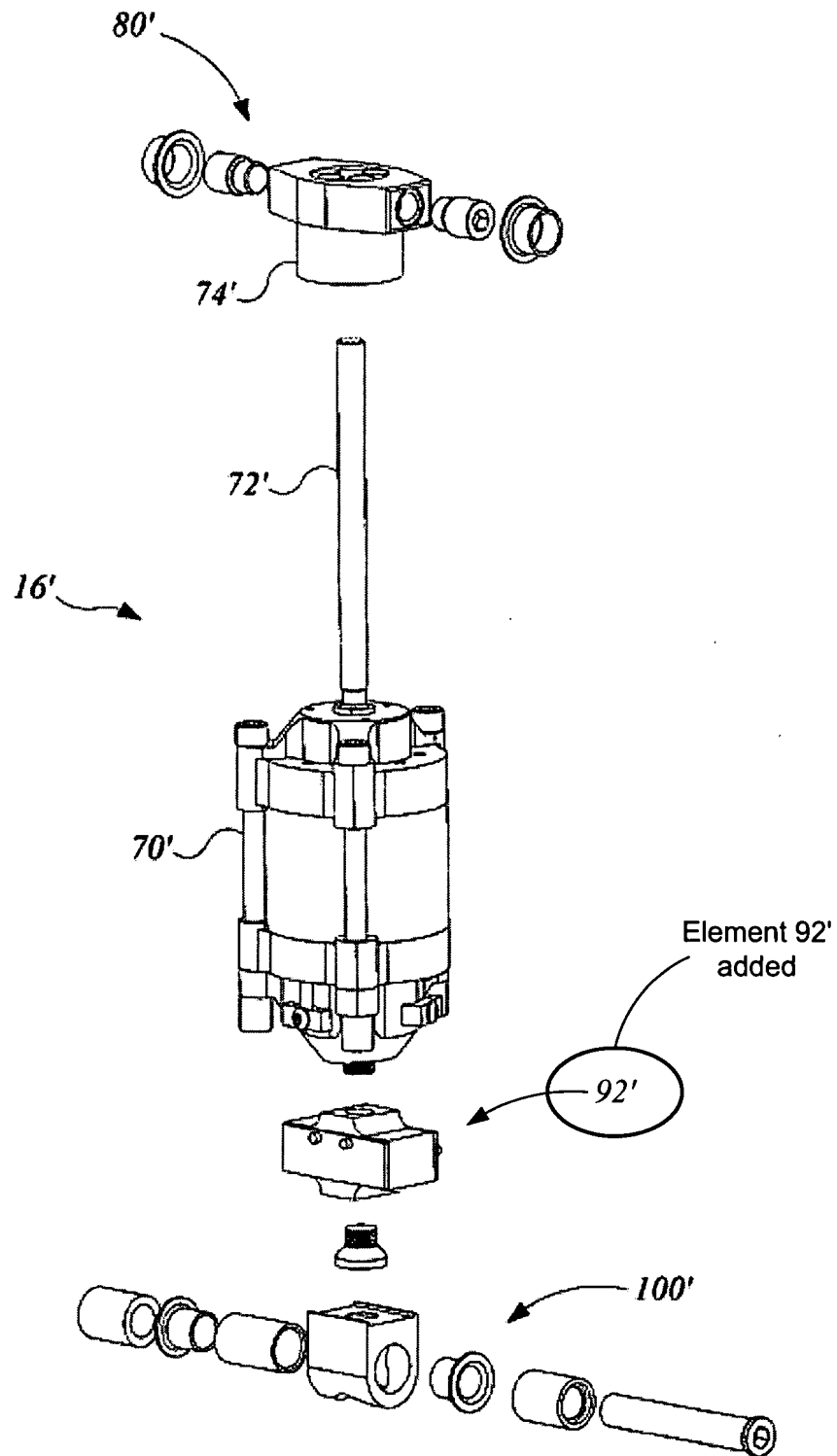


Fig. 16



*Fig. 17*